WHAT IS CLAIMED IS:

1. A modified Cre recombinase gene for mammals modified so as to be expressed in an elevated level in mammals by selecting codons frequently used in mammals.

2. A polynucleotide comprising the modified Cre recombinase gene for mammals according to claim 1.

3. The polynucleotide according to claim 2, further comprising at least one of following sequences;

(1) regulatory sequences operatively liked to the modified Cre recombinase gene for mammals,

(2) a marker gene,

(3) a nucleic acid encoding a nuclear transport signal, and

~~(4) Kozak sequence.~~

4. The polynucleotide according to claim 3, wherein at least one of the regulatory sequences is an inducible promoter.

5. The polynucleotide according to claim 4, wherein the inducible promoter is a location-specific promoter.

6. The polynucleotide according to claim 4, wherein the inducible promoter is a time-specific promoter.

7. A polynucleotide complementary to the polynucleotide according to any one of claims 1 to 6.

8. An animal into which the gene encoding the polynucleotide according to any one of claims 1 to 6 is

introduced.

9. An organ into which the gene encoding the polynucleotide according to any one of claims 1 to 6 is introduced.

10. A tissue into which the gene encoding the polynucleotide according to any one of claims 1 to 6 is introduced.

11. A cell into which the gene encoding the polynucleotide according to any one of claims 1 to 6 is introduced.

12. A method of knocking-in a desired gene in a location controlled and/or time-controlled manner; comprising the steps of:

(1) introducing a first gene construct and a second construct into cells, tissues, organs or whole bodies,

wherein the first gene comprises a polynucleotide according to any one of claims 1 to 6 and an inducible promoter for inducing expression of the polynucleotide at a site into which the desired gene is to be knocked-in, in a location-controlled and/or time-controlled manner; and the second gene construct comprises a first loxP sequence, a second loxP sequence located downstream of the first loxP sequence, a second promoter sequence located upstream of the first loxP sequence, and the desired gene located downstream of the second loxP sequence,

(2) expressing a Cre recombinase gene by the inducible promoter in a location-controlled and/or time-controlled manner, and

(3) placing the desired gene under control of the promoter sequence in the second gene construct by means of site specific recombination on the second gene construct by Cre recombinase expressed in step (2), thereby knocking-in the desired gene in a location-controlled manner and/or time-controlled manner.

13. A method of knocking-out a desired gene in a location controlled and/or time- specific manner; comprising the steps of:

(1) introducing a first gene construct and a second gene construct into cells tissues organs or whole bodies,

wherein the first gene construct comprises a polynucleotide according to any one of claims 1 to 6 and an inducible promoter for inducing expression of polynucleotide at a site into which the desired gene is to be knocked-out, in a location-controlled and/or time-controlled manner; and the second gene construct comprises a first loxP sequence, a second loxP sequence located downstream of the first loxP sequence, a promoter sequence located upstream or downstream of the first loxP sequence, and the desired gene located downstream of the promoter and the first loxP sequence,

(2) expressing a Cre recombinase gene by the

inducible promoter in a location-controlled manner, and

(3) falling off a part or whole of the desired gene from the second gene construct by means of site specific recombination on the second gene construct by Cre recombinase expressed in step (2), thereby knocking-out at least a part or whole of the desired gene, in a location-controlled and/or time-controlled manner.

14. The method of claim 12 or 13, wherein the desired gene is selected from the group consisting of a xenograft antigen, carcinogenic antigen, and anti antibody-production-associated-molecule antibody.

15. A transgenic animal into which a desired gene is knocked-in in a location-controlled and/or time-controlled manner in accordance with the method of claim 12.

16. A transgenic animal from which a second desired gene is knocked-out in a location-controlled and time-controlled manner in accordance with the method of claim 13.

17. The transgenic animal according to claim 16, wherein the animal is swine.

18. An organ taken out from the transgenic animal according to claim 16.

19. A tissue taken out from the transgenic animal according to claim 16.

20. A cell taken out from the transgenic animal

~~according to claim 16.~~

SUB C2

21. A method for treating a disease caused by malfunction of an organ, tissue and/or cell comprising a step of transplanting the organ according to claim 18, the tissue according to claim 19, and/or the cell according to claim 20 into an organism.

ADD C3

add D5) add E1)